AMENDMENTS TO THE CLAIMS:

1. (Original) An apparatus for inspecting and calculating the residual strength of an aramid fiber suspension rope driving an elevator, the apparatus comprising:

a housing, the housing comprising:

(a) a transmitter for introducing an acoustic wave along the aramid fiber rope;

(b) a first receiver for positioning on a side of the transmitter along the rope and for receiving the acoustic wave traveling along the aramid fiber rope and providing a first signal indicative of the time when the first receiver has received the acoustic wave; and

(c) a second receiver for positioning on the side of the transmitter along the rope and for receiving the acoustic wave traveling along the aramid fiber rope and providing a second signal indicative of the time when the second receiver has received the acoustic wave; and

processing means for processing the first and second signals to calculate the residual strength of the rope.

2. (Original) The apparatus according to claim 1, wherein the means for processing the first and second signals comprises a control system connected to the transmitter and the receivers, the control system having a program and associated algorithms for processing the time between the first and second signals in connection with the distance between the first receiver and the second receiver to calculate (i) the velocity of the wave; (ii) the modulus of the rope; and (iii) the residual strength of the rope.

3. (Original) The apparatus according to claim 1, wherein the housing is removable from the transmitter and the first and second receivers prior to data collection.

4. (Original) The apparatus according to claim 1, wherein apparatus comprises removable alignment means for aligning the transmitter and first and second receivers on the aramid rope.

5. (Original) The apparatus according to claim 4, wherein the alignment means

positions one or more of each of the transmitter and first and second receivers at a predetermined position along the aramid fiber rope.

6. (Original) The apparatus according to claim 5, wherein the alignment means is a jig.

7. (Original) The apparatus according to claim 1, wherein the transmitter and the first and second receivers comprise clamping means for maintaining each of the transmitter and the receivers in acoustical contact with the aramid fiber rope during data collection.

8. (Original) The apparatus according to claim 1, wherein the position of any one or more of the transmitter and the first and second receivers are fixable along the aramid fiber rope.

9. (Original) The apparatus according to claim 1, wherein the transmitter introduces the acoustic wave along the aramid fiber rope by striking a surface of the transmitter.

10. (Original) The apparatus according to claim 9, wherein the transmitter comprises a solenoid which introduces the acoustic wave by striking an interior surface of the transmitter.

11. (Original) The apparatus according to claim 1, wherein the first receiver, the second receiver, or both, comprise a vibration sensor for sensing the vibration caused by the acoustic wave introduced along the rope by the transmitter.

12. (Original) The apparatus according to claim 11, wherein the vibration sensor is a piezoelectric vibration sensor.

13. (Original) The apparatus according to claim 12, wherein the piezoelectric vibration sensor further comprises a vibratory mass member.

14. (Original) The apparatus according to claim 1, further comprising signal amplification circuitry for amplifying signals generated by the acoustic wave.

15. (Original) The apparatus according to claim 1, further comprising signal filtering circuitry for filtering noise from signals generated by the acoustic wave.

16. (Original) The apparatus according to claim 1, further comprising one or more additional receivers for receiving the acoustic wave traveling along the aramid fiber rope and providing one or more corresponding signals indicative of the time when the one or more additional receivers have received the wave.

17. (Original) The apparatus according to claim 1, wherein the second receiver is positioned on the rope further from the transmitter than the first receiver.

18. (Original) A method for inspecting and calculating the residual strength of an aramid fiber rope driving an elevator to determine when the rope is in need of replacement, the method comprising:

(a) providing a transmitter along the aramid fiber rope for introducing an acoustic wave along the rope;

(b) providing a first receiver along the aramid fiber rope, wherein the first receiver is capable of detecting the acoustic wave traveling in the rope and providing a first signal indicative of the time when the first receiver has received the wave;

(c) providing a second receiver along the aramid fiber rope, wherein the second receiver is capable of detecting the acoustic wave traveling in the rope and providing a second signal indicative of the time when the second receiver has received the wave, wherein the second receiver is positioned on the rope further from the transmitter than the first receiver;

(d) introducing an acoustic wave into the rope with the transmitter;

(e) determining the time between the first signal generated by the first receiver and the second signal generated by the second receiver;

(f) determining the velocity of the acoustic wave in the rope; and

(g) calculating the residual strength of the rope.